Management of Varicose Veins During Pregnancy

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• **The incidence of recurrences after radical venous operations done during pregnancy or where pregnancy has occurred subsequently is much higher than it is in cases in which pregnancy is not a factor. These discouraging results are due to increased venous pressure, obstruction to the venous drainage of the lower extremities and hormonal factors. The management of varicose veins during pregnancy should be by conservative means consisting of proper elastic support, elevation of the extremities at night and during rest periods in the day, avoiding static dependency of the legs, and control of body weight. In event of venous stasis and severe symptoms of varicosis that cannot be controlled by conservative measures, limited surgical intervention is indicated. This should consist of high ligation and division of the involved venous trunk and the immediate tributaries. Radical extirpation of varicose veins should be reserved until further pregnancy is not contemplated.**

RECENTLY a number of investigators have advocated definitive therapy for varicose veins during pregnancy. Some of them have recommended radical surgical operation,[7,9,12] others sclerotherapy[1,5,8] or a combination of these two methods.[2] There is no longer any doubt that extensive operation on veins is reasonably safe during pregnancy, but to recommend that it be done routinely for varicosities in pregnant women would seem to disregard the fact that the aggravating factor in bringing about the varicose condition is not removed. Many of the proponents of sclerotherapy are enthusiastic about the method, and in some cases carry their therapy to the eighth month.[9] However, one must bear in mind that the use of sclerosing agents in an intact saphenous trunk entails the hazard of uncontrolled ascending thrombophlebitis. Advocates of each of these forms of therapy have cited good immediate results. In studies that we made of results some time after such treatment, however, no justification was found for enthusiasm for any form of definitive treatment during pregnancy.

In a previous report[4] on a series of 71 patients (in whom pregnancy was not a factor) treated by radical varicose phlebectomy, a recurrence rate of 4.5 per cent after 18 months or longer was noted. By contrast, varicosities recurred in five of seven patients who were operated on during pregnancy or in whom pregnancy was a factor later (Table 1). Weismann[12] in reporting on a series of 23 patients with varicose veins in pregnancy noted that 14 had had previous therapy for the condition, including radical operations in two cases.

In many cases recurrence is directly attributable to factors other than the congenital absence or deficiency of venous valves[6,10] usually noted in simple varicosis. The increase in total volume of blood and the local increase in volume in the pelvic veins due to uterine growth and increasing arteriovenous fistulae in the placenta[11] must be considered. Varying degrees of obstruction to venous drainage from the lower extremities may be caused by pressure attributable to the position and size of the uterus, length and mobility of the supporting ligaments, size of the pelvis or tone of the abdominal muscles. Early in pregnancy, even before the placenta is formed and before the uterus is large enough to cause pressure, varicosities may appear in large numbers. This is probably the effect of hormonal changes.

By direct measurement[11] of popliteal vein pressure in pregnant women it was found that, in patients who had edema or varicose veins or both, an increase in pressure consistent with obstruction developed on exercise. In patients without edema or varicosities, the change in pressure between resting and exercising was within normal limits. In the case of a patient who had edema and varicose veins in one leg and none in the other leg, the pressure studies indicated obstruction on the affected side only. The obstructive factor is of paramount im-

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TABLE 1.—*Results of Radical Varicose Phlebectomy*

Cases	Patients	Limbs	Good Result		Unsatisfactory	
			Number	Per Cent	Number	Per Cent
Pregnancy *not* a factor	71	110	105	95.5	5	4.5
Concomitant or subsequent pregnancy	7	11	3	28	8	72

portance in the etiology of unusual kinds of varices observed in pregnancy, such as gluteal and vulvar varicose veins. Such varices indicate communications between superficial veins and the deep pelvic system and are most likely to disappear completely in the postpartum period. Furthermore, varicosities whose main origin is in the gluteal and pudendal tributaries of the hypogastric venous system are not especially affected by operation directed to the saphenous system. Also, the more radical procedures proposed for use during pregnancy will not adequately solve the problem of incompetent perforators so long as the aggravating feature of increased deep venous pressure, due to the obstruction of the pelvic veins by the growing pregnancy, exists.

To some extent varicosis in pregnancy is a reversible process, and the milder forms may resolve completely in the postpartum period. A certain degree of resolution of the more severe forms of varicosis can also be expected following pregnancy, depending upon the tissue elasticity of the individual.

From clinical observation and what is known of the pathological changes that take place in the development of varices, it is clear that radical surgical treatment of varicose veins during or preceding pregnancy is only of temporary value. Moreover, once an extensive operation has been done, the anatomical relationships are so distorted and the normal landmarks so disturbed that it is impossible to carry out a proper surgical extirpation[3] later—a serious consideration in light of the high rate of recurrence. Hence, the basic management of all degrees of varicosis during pregnancy should be conservative.

The keystone of conservative medical management is an adequate elastic support consisting of medium weight elastic stocking extending from the toes to the midthigh. The support must be of sufficient strength to keep the varicosities fully compressed when the patient is standing. In addition, elevation of the foot of the bed on six-inch blocks and frequent rest periods during the day with the legs elevated above the level of the heart will help promote venous return. During the last few weeks of pregnancy this position may have to be discontinued if the enlarged uterus causes dyspnea. Prolonged standing in one position or sitting with the feet dependent should be avoided. The patient must not use circular elastic garters. Finally, weight gain should be kept to a minimum and obese patients should be encouraged to lose weight. These simple measures will adequately control minimal and moderate varices, and in many cases will control the symptoms of severe varices.

Surgical intervention during pregnancy is indicated only for severe symptoms, clearly due to varicosis, or because of objective findings that are manifestations of progressive venous stasis. One would consider operation for a woman who has pronounced sensation of heaviness, fullness or pain in the legs that cannot be relieved by elastic support, or who has signs of venous stasis such as dermatitis, increasing pigmentation or ulcer formation uncontrolled by conservative means.

For such patients we limit the surgical procedure to a high ligation and division of the main incompetent venous trunks and division of the immediate tributaries. This procedure, whether involving the long or the short saphenous veins, can easily be carried out between the third and seventh months of pregnancy, using local anesthesia and permitting the patient to remain ambulatory. So simple a procedure is effective in interrupting the head of pressure in the long or short saphenous system. Combined with proper medical management this procedure will effectively control the symptoms of severe varices. Neither surgical operation nor sclerotherapy should ever be advised for cosmetic reasons during pregnancy. Furthermore, one should not lose sight of the fact that in gravid women the surgical procedure is only palliative. At the end of childbearing activity significant varicosis can then be properly treated by radical means[4] and completely eradicated.

Acute thrombophlebitis of the long or short saphenous system is a problem somewhat apart from simple varicosis. This complication should be treated by prompt interruption of the affected vessels at their proximal ends to prevent entry of the thrombus into the deep system. The use of anticoagulants has no place in the treatment of this particular complication.

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Discussion by **A. M. McCAUSLAND, M.D., Los Angeles**

The authors are to be commended for their common sense and conservative approach to this most neglected yet important complication of pregnancy. I concur with their ideas. However, in addition to their comments, I am sure injection and hormonal therapy have a definite place in the treatment of varicose veins during pregnancy.

The fact that there is a considerable recurrence rate after operation or injection or both in pregnant and nonpregnant patients is evidence that the underlying cause of varicose veins is not being eradicated. Only the isolated varicosities are being destroyed and as long as the basic etiological factors are present, other varicosities may occur over a period of years.

This brings one to the intriguing question of etiology, and there are many theories. Certainly pressures from the enlarging uterus, increased volume of blood and increased cardiac output cannot be the only factors, since we see varicose veins developing in the early weeks of pregnancy. Hormonal factors must play an important part. In 1939 we found that in 150 varicose vein cases analyzed, there was a very low incidence of abortion. This pointed to a relatively high level of progesterone which we felt might not only relax the uterus, but also would relax smooth muscle in veins, ureters, gallbladder and intestines. With this in mind a selected group with pronounced telangiectasis unsuitable for injections were treated with estrogen in an attempt to correct the imbalance in the estrogen-progesterone relationship. The results were most gratifying. Hormonal therapy is best suited for patients with decided telangiectasis unsuitable for injections and where elastic support cannot be applied. Stilbesterol, 5 mg. three times a day, is usually adequate.

Sclerotherapy is as safe in pregnant as in nonpregnant women and may be carried out in any month of pregnancy if the same tests (Trendelenburg and Von Perthes') and the usual surgical precautions are used. This is borne out by reports of large series of cases in this country and abroad. (21,000 cases at Margaret Hague Maternity Hospital; 600 cases at Rotunda Hospital and an estimated 2,000 cases in the Los Angeles City Maternity Clinic and private practice.) An isolated varicose vein feeding a telangiectatic area is particularly well suited for injection, and excellent results are obtainable. The telangiectatic spread will thus be stopped.

Yet I find that with better elastic supports now available fewer injections are given and less hormonal therapy is used in private practice.

I agree that there are situations in which radical venous operation should be done—but, as a rule, *only* after varicose veins have involuted as much as they will, which occurs at about the third postpartum month, and preferably after no further pregnancies are contemplated.

Social Security Footnotes

IN THE FIRST FIVE MONTHS of the 85th Congress, the lawmakers introduced more than a hundred bills designed to broaden the Social Security program in one way or another. Such open-handed proposals invariably win acclaim, and more tangible rewards at the polls, for their sponsors. But the alarming fact is that years ahead of schedule, the growth of the Old Age and Survivors Insurance Trust Fund has come to an end. At the moment it is paying out more than it is taking in. This unexpected deficit should serve as a red flag to the Treasury, the taxpayer, and all those who are looking forward one day to receiving retirement checks of their own. However generous its motives, even a federal pension fund cannot go on incurring obligations which exceed its resources.

—From the Department of Public Relations, American Medical Association